

Abstract of the Disclosure

A method of diffusion welding of different metals is accomplished while applying pressure to the butt area and homogeneous heating the butt area to about 0.8 to about 0.9 the melting point of the metals to be welded. Additional heat pulses are then supplied to the butt area. The number of additional heat pulses depends on the diameter of the pieces to be welded. The heat pulses provide for a more even temperature distribution over the butt area and increases the number of active diffusion centers to enhance the diffusion process. The method is useful for different refractory and stainless steels and alloys. The resultant diffusion welds do not produce burring.